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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,750	12/20/2001	Greg J. Krawczyk	1-23350	1962

46582 7590 11/29/2004

MACMILLAN, SOBANSKI & TODD, LLC  
ONE MARITIME PLAZA - FOURTH FLOOR  
720 WATER STREET  
TOLEDO, OH 43604

EXAMINER

SY, MARIANO ONG

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/028,750

Applicant(s)

KRAWCZYK ET AL.

Examiner

Mariano Sy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 6-10 and 22-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-10 and 22-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. The amendment filed on September 27, 2004 has been received.
2. The amendment to the specification filed on September 27, 2004 "Please add the following paragraph starting Page 28, line:" is objected because the last page of the specification is page 23.
3. Claim 10 is objected to because of the following informalities:  
Claim 10, line 3 "flux gap is internal" --flux gap is formed internal--.  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 10, 22, 23, 27-29, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the limitation "first lateral flux gap is formed external to the major outer diameter of the armature and the second lateral flux gap is internal to the major outer diameter of the armature" in lines 2-3. It is vague and unclear what applicant is conveying as to the external / internal to the major outer diameter of the armature.

Claim 10 recites the limitation "the major outer diameter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "to allow flow through the valve" in line 3. It is unclear if applicant is referring to --to allow said fluid to flow through the valve--.

Claim 27 recites the limitation "the portion of said flux ring" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claims 28 and 29 are indefinite due to their dependency on claim 27.

Claim 31 recites the limitation "first working lateral flux gap is formed external to a major outer diameter of the armature and the second working lateral flux gap is internal formed to the major outer diameter of the armature" in lines 2-3. It is vague and unclear what applicant is conveying as to the external / internal to the major outer diameter of the armature.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 6-10 and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reinartz et al. (US 5,503,184) in view of Studtmann et al. (US 5,110,087) and Slavin et al. (US 5,513,673).

Reinartz et al. disclose a coil operated control valve comprising: a closed tube structure formed by a sleeve wherein the sleeve forms a pressure boundary about an armature, and the armature is disposed within the sleeve, and the coil is disposed outside the sleeve.

Studtmann et al. disclose, as shown in fig. 3, a coil operated control valve comprising: a valve seat 295; a pole piece 214 defining at least a first pole shoulder G and a second pole shoulder F that are both stationary relative to the valve seat, an armature 220 moving a valve portion 274 relative to the valve seat to control flow of a fluid through the valve seat, the armature defining at least a first armature shoulder G, the first armature shoulder cooperating with the first pole shoulder to define a first lateral flux gap GG and a flux ring 212 mounted about a portion of the armature, a third working lateral flux gap RR being defined between a portion of said flux ring disposed about the armature and the portion of said armature disposed in said flux ring.

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Studtmann et al. failed to disclose that second armature shoulder cooperating with the second pole shoulder is a second working lateral flux gap.

Slavin et al. disclose, as shown in fig. 1, a multiple stepped lateral flux gaps.

It would have been obvious to one of ordinary skill in the art to have provided the valve of Reinartz et al. with the stepped arrangement of Studtmann et al. and Slavin et al., in order to provide a variable control of the pressure and flow rate of fluid on the valve.

Re-claim 7, see fig. 3.

Re-claim 8, see pin 277.

Re-claim 9, see ring 212 and col. 10 lines 36-41.

Re-claim 10, see fig. 3 of Studtmann et al.

Re-claim 22, the base of Reinartz et al.'s pressure tube.

Re-claim 23, that Reinartz et al.'s pressure tube is non-magnetic is implicit since a magnetic tube would disturb the magnetics of the arrangement.

Re-claims 24 and 25, see Studtmann et al. fig. 3.

Re-claim 26, see Reinartz et al.

9. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Studtmann et al. (US 5,110,087) in view of Slavin et al. (US 5,513,673).

Re-claims 30 and 31 Studtmann et al. disclose, as shown in fig. 3, a coil operated control valve comprising: a valve seat 295; a pole piece 214 defining at least a first pole shoulder G and a second pole shoulder F that are both stationary relative to.

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the valve seat, an armature 220 moving a valve portion 274 relative to the valve seat to control flow of a fluid through the valve seat, the armature defining at least a first armature shoulder G, the first armature shoulder cooperating with the first pole shoulder to define a first lateral flux gap GG and a flux ring 212 mounted about a portion of the armature.

However Studtmann et al. failed to disclose that second armature shoulder cooperating with the second pole shoulder is a second working lateral flux gap and in stepped relationship.

Slavin et al. disclose, as shown in fig. 1, a multiple stepped lateral flux gaps.

It would have been obvious to one of ordinary skill in the art to have included stepped lateral flux gaps into the valve of Studtmann et al., as taught by Slavin et al., in order to provide a variable control of the pressure and flow rate of fluid on the valve.

10. Claim 27 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

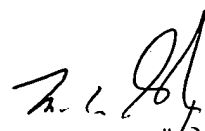
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariano Sy whose telephone number is 703-308-3427. The examiner can normally be reached on Mon.-Fri. from 9:00 A.M. to 3:00 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci, can be reached on 703-308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 M. Sy

November 17, 2004

  
11/23/04  
MATTHEW C. GRAHAM  
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GROUP 310